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ABSTRACT

A study identified and compared writing needs of graduates of Criminal Justice and Drafting and Design programs at Westmoreland County, Pennsylvania, Community College (WCCC). Subjects, 115 graduates of the programs from 1972 through 1990, completed surveys. A total of 310 questionnaires were sent, for a return rate of 37%. Results indicated that: (1) writing is important to graduates of both programs, but significantly more (95%) WCCC criminal justice (CRJ) graduates than drafting and design graduates (40.9%) rated writing very important; (2) 95% of the CRJ graduates reported writing on the job every day compared to 63.6% of drafting graduates; (3) a significantly larger proportion of CRJ graduates reported preparing narratives, formal reports, and letters; (4) a significantly larger proportion of drafting graduates reported preparing instructions; (5) a significantly larger proportion of CRJ graduates than drafting graduates reported writing for readers inside their organizations; (6) 89% of graduates of both programs rated accuracy, clarity, and organization as very important; and (7) 90% of the CRJ graduates compared to 45.5% of drafting graduates recommended a second-level college writing course specifically targeted at their field. Findings suggest that writing is an important and frequent on-the-job activity of both groups. Recommendations include implementation of a writing course designed specifically for criminal justice majors and placement of more emphasis upon the importance of writing to all graduates of technical programs. (Twelve tables and 9 figures of data are included; 20 references, the pre-contact letter, the cover letter and questionnaire, and the follow-up postcard are attached.) (RS)

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A SURVEY OF THE WRITING NEEDS OF GRADUATES OF TWO SELECTED COMMUNITY COLLEGE PROGRAMS OF STUDY

Curriculum and Program
Planning Seminar

by

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A Practicum Report presented to Nova University in partial fulfillment of the requirements for the degree of Doctor of Education

Nova University

October, 1992

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Abstract of A Practicum Report Presented to Nova University in Partial Fulfillment for the Requirements for the Degree of Doctor of Education

A SURVEY OF THE WRITING NEEDS OF GRADUATES OF TWO SELECTED COMMUNITY COLLEGE PROGRAMS OF STUDY

by

Judith Metzgar

October, 1992

Technical Communications is the required second-level writing course in four of the technical programs leading to the Associate in Applied Science degree at Westmoreland County Community College. It is an option for eleven other technical programs. Topics covered and assignments made in the course are based upon assumptions about writing needs graduates will experience on the job. The problem was the need for meaningful job-related writing assignments in the technical writing classes. The purpose of this study was to identify and compare writing needs of graduates of two technical programs at Westmoreland County Community College: Criminal Justice and Drafting and Design.

The study was designed to answer the following research questions about the differences between criminal justice and drafting graduates' writing on the job:

1. Is there a difference in the importance of writing to a criminal justice graduate and a drafting graduate?

2. Is there a difference in the amount of writing done on the job?

3. Is there a difference in the types (memos, letters, proposals, reports) of writing required?

4. What differences (if any) are there in the types of visuals used to accompany written documents produced by criminal justice and drafting graduates?

5. Is there a difference in the audience for whom the graduates write?

6. Is there a difference in the importance of specific writing skills to criminal justice and drafting graduates?

Research hypotheses for each of the questions were constructed.

Following a review of the literature and college approval of a preliminary proposal, data was collected by surveying 369 Westmoreland County Community College (WCCC) graduates of the Criminal Justice (CRJ) and Drafting and Design (D/D) Programs from 1972 through 1990. Instruments used included a pre-contact letter, a specially prepared questionnaire, and a follow-up post card. Collected data was analyzed by means of inferential and descriptive statistics.

The pre-contact letter removed 59 names from the list of graduates. Of the 310 questionnaires sent, 115 (37 percent) were returned. Results of analysis of the data included the following:

1. Writing is important to graduates of both programs, but significantly more (95 percent) WCCC criminal justice graduates than drafting and design graduates (40.9 percent) rated writing very important.

2. Ninety-five percent of criminal justice graduates reported writing on the job every day compared to 63.6 percent of drafting graduates.

3. A significantly larger proportion of criminal justice graduates reported preparing three of twelve types of written communication: narratives, formal reports, and letters. A significantly larger proportion of drafting graduates reported preparing instructions.

4. A significantly larger proportion of criminal justice graduates reported use of one of six types of visuals to accompany written documents: photographs. A significantly larger proportion of drafting graduates reported use of drawings, tables, and charts.

5. Of three types of readers for the documents they prepare, a significantly larger proportion of criminal justice graduates than drafting graduates reported writing for readers inside their organizations.

6. When asked to name the two of six top concerns about writing for the declared audiences, a significantly larger proportion of criminal justice graduates than drafting graduates selected accuracy. When restrictions were removed and choices of writing skills expanded, more than 89 percent of graduates of both programs rated accuracy, clarity, and organization as very important.

7. Ninety percent of responding CRJ graduates compared to 45.5 percent of drafting graduates recommended a second-level college writing course specifically targeted at their field.

From the results it was concluded that use of recommended procedures by experts in survey design had some positive results. Specifically, the pre-contact letter successfully removed some of the names from the original mailing list. It also helped determine the validity of some older addresses used, showing that surveys of graduates at WCCC can include older graduates. Additional conclusions arose from analyzing the data. The graduates' responses showed that writing is an important and frequent on-the-job activity of (WCCC) criminal justice and drafting graduates confirming the need for a second-level writing course for these technical majors. Finding that criminal justice graduates consider writing more important and do more writing on the job than drafting and design graduates could be a significant factor impacting decisions about writing courses for criminal justice students. Data from reporting graduates also led to the conclusion that audience and specific writing skills are significant to graduates of both programs and should continue to receive attention in the technical communications courses. A major conclusion that could be drawn from the study is that the study outcomes could be utilized to make decisions in regard to course content, assignments made, and course offerings in technical communications. For example, the information concerning significant differences in the types of written communication prepared and the types of visuals being used on the job by WCCC criminal justice graduates and WCCC

drafting and design graduates could be addressed by considering alternatives to present technical communications course offerings.

The following recommendations pertaining to conducting surveys at Westmoreland County Community College stem from this research. Pre-contact letters should be used to determine validity of available addresses. Follow-up postcards should be used as a successful alternative to mailing out a second questionnaire or using a follow-up letter. Graduates with addresses over five years old should be included in WCCC survey research, despite the limitation of non-response bias the inclusion imposes. Literature on previous studies of a similar nature should be utilized for assistance in preparing the study being undertaken.

The study outcomes should provide the bases for decision making in regard to technical communications course content and assignments, as well as technical communications course offerings provided by Westmoreland County Community College. Specific recommendations include the following:

1. Westmoreland County Community College technical programs should continue to require a second-level course in writing.

2. A writing course designed specifically for the criminal justice major at Westmoreland County Community College should be implemented. Content of this course should focus on the techniques involved in the preparation of narrative reports, formal reports, and letters.

Attention should also be given to writing description and preparing memos. The use of photographs, drawings, and maps should be included. Consideration of audience should be a part of the course content with special attention given to readers inside the organization. The skills involved in achieving accuracy and clarity should be addressed — specifically sentence structure, vocabulary, organization, and the mechanics of punctuation and capitalization.

3. Since the present technical communications program which includes preparation of instruction and tables meets the on-the-job writing tasks as described by responding graduates of the drafting program, it should be retained as a general course offering for students in technical fields such as the drafting program.

4. More emphasis should be placed upon the importance of writing to all graduates of the technical programs. Results from studies such as the present study should be utilized to impress present students with the significance of the job they face in the class and in future work situations.

5. Further studies surveying graduates of WCCC are recommended. Graduates from technical programs other than criminal justice or drafting could provide data that would yield information for decision making in regard to course content or revision. Finally, it is recommended that similar studies be undertaken which are not confined to graduates of a single educational institution, so that broader conclusions can be drawn.

TABLE OF CONTENTS

Page

LIST OF TABLES x

LIST OF FIGURES xi

Chapter

1. INTRODUCTION 1

Background 1

Purpose of the Investigation 1

Significance 2

Research Questions 3

Hypotheses 4

2. REVIEW OF THE LITERATURE 6

3. METHODOLOGY AND PROCEDURES 12

Research Methodology 12

Procedures 12

Data Collection 13

Population 13

Instruments 14

Data Treatment 15

Limitations 18

Assumptions 19

4. RESULTS 20

5. DISCUSSION. CONCLUSIONS, IMPLICATIONS AND RECOMMENDATIONS 51

Discussion 51

Conclusions 61

Implications 66

TABLE OF CONTENTS (Cont.)

Page

Recommendations for the Improvement of Practice . . 72

REFERENCES 76

APPENDICES 79

APPENDIX A 79

APPENDIX B 81

APPENDIX C 83

APPENDIX D 85

APPENDIX E 87

LIST OF TABLES

Table		Page
1.	Perceptions of the Importance of Writing to Criminal Justice and Drafting Graduates.	24
2.	Frequency of Writing Reported by Criminal Justice and Drafting Graduates	26
3.	Types of Communication Reported Being Used by Criminal Justice and Drafting Graduates.	32
4.	Means, Standard Deviations and T-Test on Total Number of Forms of Communication Used on Job. . .	33
5.	Types of Visuals Reported Being Used by Criminal Justice and Drafting Graduates	36
6.	Comparison of Frequency of Graphics Use Reported by Criminal Justice and Drafting Graduates. . . .	38
7.	Types of Readers Reported by Criminal Justice and Drafting Graduates	41
8.	Ranking of Specific Writing Skills by Criminal Justice Graduates	43
9.	Ranking of Specific Writing Skills by Drafting Graduates	44
10.	Types of Concerns About Writing Reported by Criminal Justice and Drafting Graduates	48
11.	Responses of Reporting Graduates Concerning Importance of a Writing Course in College.	49
12.	Recommendations of Reporting Graduates Concerning Specifically Targeted Second-Level Writing Courses.	50

LIST OF FIGURES

Figure		Page
1.	Importance of Writing to Performing Job.	23
2.	Comparison of Writing Frequency.	25
3.	Percentage of Each Day CRJ Graduates Spend Writing.	27
4.	Percentage of Each Day Drafting Graduates Spend Writing.	29
5.	Comparison of Types of Written Communication . . .	30
6.	Types of Visuals Used.	34
7.	Comparison of Types of Readers	40
8.	Skills Considered Very Important to Preparing Written Communications	45
9.	Comparison of Concerns of Respondents.	47

Chapter 1

INTRODUCTION

Background

The present Technical Communications course at Westmoreland County Community College is a required second-level English course for the Associate in Applied Science degree in Drafting Design and Criminal Justice. Technical Communications is a choice from three second-level writing courses (Technical Communications, Business Communications, and Advanced Composition) students in several other technical programs may make. Students from fields such as electronics engineering technology, child care, computer-aided drafting, computer-aided drafting design, computer-numerical control, criminal justice, and graphic communication technology all take the same technical communications course.

Topics covered, types of documents explained, and assignments made in the technical communications classes are based upon assumptions about the needs graduates will meet on the job. Assignments based upon those assumptions may not be targeting the actual writing tasks the graduates will encounter. The problem is the need for meaningful job-related writing assignments in the technical writing classes.

Purpose of the Investigation

The purpose of this study was to identify and compare the writing needs of graduates of the Criminal Justice

program and the Drafting Design program. Comparing the responses of graduates of the two programs was expected to show whether the present technical communications course is meeting the needs of the students. The study was also expected to help determine whether a separate course for students in each of the programs of study involved in the study might be better than the present general technical writing course in place.

Significance to the Institution

Westmoreland County Community College is a two-year college with 6000 commuting students. The college offers two degrees: the Associate in Applied Science degree and the Associate in Arts. Both programs allow for a concentration in a selected major. The Associate in Applied Science Degrees are offered in technical fields. For the majority of the technical programs, the student is provided with a choice of technical communications, business communications, or advanced composition. In the Criminal Justice program and the Drafting and Design program, however, the students are required to take technical communications. Determining the writing needs of the graduates of the two programs would provide a basis for decisions about activities and objectives that should be considered in the design of the technical communications course.

Dr. Linda Kaminski, Vice-President for Academic Affairs at the college expressed great interest in this project. Peggy Yusten, Vice-President/College Support Services found

the study significant enough to provide computerized print-outs of the survey population through the college Research Office in order that this researcher could conduct the survey.

Relationship to the Seminar

This study relates to the Curriculum and Program Planning Seminar. Gagne and Briggs (1979) list analysis of needs, goals and priorities first in their discussion of the various stages of design of instructional systems (p. 23). This study has sought to analyze students' writing needs through a survey of graduates. The responses of the graduates will be used to determine appropriate writing assignments for people studying to enter the targeted fields. Their responses will also be used to make decisions about program design. The focus of the study is curriculum and instruction.

Research Questions

The study was designed to answer the following research questions:

1. Is there a difference in the importance of writing to a graduate of the Criminal Justice program and the importance of writing to a graduate of the Drafting and Design program?

2. Is there a difference in the amount of writing done on the job by graduates of the Criminal Justice program and graduates of the Drafting and Design program?

3. Is there a difference in the types (memos, letters,

proposals, reports) of writing required of the criminal justice graduate as compared to the types of writing required of the drafting and design graduate?

4. What differences (if any) are there in the types of visuals used to accompany written documents produced by graduates of the Criminal Justice program and the types of visuals used to accompany written documents porduced by graduates of the Drafting and Design program?

5. Is there a difference in the audience for whom the criminal justice graduate writes and the audience for who the drafting and design graduate writes?

6. Is there a difference in the importance of specific writing skills to graduates of the Criminal Justice programs and graduates of the Drafting and Design program?

Research Hypotheses

Research hypotheses were posed for the research questions.

1. There is a significant difference in the importance of writing to a graduate of the Criminal Justice program and the importance of writing to a graduate of the Drafting and Design program.

2. There is a significant difference in the amount of writing done by graduates of the Criminal Justice program and the amount of writing done by graduates of the Drafting and Design program.

3. There is a significant difference in the proportion of criminal justice and drafting graduates reporting the use

in their jobs of each of twelve types (prepared forms, memos, letters, proposals, formal reports, narratives, instructions, abstracts, description, meeting minutes, scripts for presentations, and progress reports) of written communication.

4. There is a significant difference in the proportion of criminal justice graduates and drafting graduates reporting use in their jobs of each of six types of visuals to accompany their documents.

5. There is a significant difference in the proportion of criminal justice graduates and drafting graduates reporting writing in their jobs for each of three types of readers.

6. There is a significant difference in the proportion of criminal justice graduates and drafting graduates reporting concern about six types of writing skills.

Chapter 2

REVIEW OF THE LITERATURE

The review of the literature was divided into two sections. One section dealt with the concept of assessing needs in order to establish a basis for making decisions about curriculum and course content. The other section concerned survey methodology. The discussion of that literature is presented in that order in this chapter: first the concept of assessing needs for curriculum design, followed by the concepts involved in survey methodology. The order, however, is reversed in Chapters 4 and 5, where the outcomes and implications of the survey methodology utilized precedes the analysis and implications of the data gathered.

In Principles of Instructional Design (1979), Robert Gagne and Leslie Briggs point out that "needs in higher education. . . are often set by precedent rather than by serious analysis" (p. 24). They place analysis of needs, goals and priorities first in their list of fourteen stages of design of instructional systems.

William J. Rothwell and H. C. Kazanas (1989) in Strategic Human Resource Development define needs assessment as "a comparison between what is and what should be" and say instruction is a means of narrowing the gap between the two (p. 97). Rothwell and Kazanas present steps for making a needs assessment that include the following: (1) identifying the learners; (2) classifying the learners according to

their special characteristics, such as job tasks and responsibilities; (3) comparing learners' actual to desired knowledge and skills; and (4) identifying the learning needs upon the basis of the information collected (pp. 87-106). One of the means of collecting the needed data that Rothwell and Kazanas discuss is the survey.

In order to establish some concrete data about needs, goals, and priorities as a basis for making decisions about instructional design, several educators in the field of technical communications have undertaken surveys of practitioners in technical fields. In his discussion of course design for technical communications, Terry Skelton (1983) states that "solving rhetorical problems at work seldom resembles the writing exercises most technical employees completed as students" (p. 45). Skelton also discusses the usefulness of field studies to determine instructional needs of technical students. As an example, Skelton (1983) refers the reader to Richard M. Davis.

Richard M. Davis's (1975) classic study of the writing activities of practicing engineers is cited by authors of subsequent studies. As a means of determining the amount and significance of writing for engineering graduates, Richard M. Davis surveyed "a group of prominent, successful and experienced engineers in a wide variety of engineering fields" (p. 1).

Terrence Glenn and Marcus Green surveyed graduates to assist in revising the technical writing course at

Cincinnati Technical College. In their essay "The Graduate Survey and Its Role in Course Revision," Glenn and Green (1983) write: "To find out if the technical writing course was providing the skills needed by technicians on the job, we went to the graduates themselves" (p. 57).

Surveying graduates to assist in curriculum design is the purpose behind one classic study, "Research into the Amount, Importance, and Kinds of Writing Performed on the Job by Graduates of Seven University Departments That Send Students to Technical Writing Courses" (1986), by Paul V. Anderson, author of Technical Communications textbooks. Anderson surveyed the writing needs of graduates of seven technical departments at Miami University of Oxford, Ohio. Anderson (1986) points out in his introduction to his report that "teachers can use this knowledge to help them make sound decisions about the design of their courses—what topics to cover, how to design assignments, and so on" (p. 190).

The second body of literature consulted focused on survey design.

While this body of literature focused on the opinions of experts in the field of survey design, it was not confined to those experts. Studies by those who had already conducted research in the area of writing by alumni also provided some perspectives arising from their experience. For example, Terry Skelton (1977) surveyed graduates for his study "A Survey of On-the-Job Writing Performed by Graduates

of Community College Technical and Occupational Programs." Skelton, who conducted his study in the fall of 1975, considered going back beyond 1972 to obtain a survey sample as increasing the risk of low response rates due to address changes. He writes: "College officials reminded me that community college students tend to be very transient and are often impossible to locate after graduation" (p. 18).

According to Stephen Isaac and William B. Michael (1987), surveys are "reactive in nature" and "only tap respondents who are accessible and cooperative" (p. 128). Older addresses, as are being used in this study, may result in a nonrepresentative return.

Paul V. Anderson (1985) in his essay "Survey Methodology" discusses the importance of ensuring that the population surveyed be representative of the population under study. He points out that generalizations can be made only about the population surveyed. If a study sample is drawn from one particular educational institution, generalizations made are confined to that institution.

Researchers on survey design, Sheldon B. Clark and Judith A. Boser (1989) were consulted. Clark and Boser gathered data from experts in the field of survey research by surveying the experts themselves. It was their purpose to obtain a consensus among the experts in order to produce a checklist of characteristics of effective mail surveys, particularly the questionnaires used. In their discussion of the results of their study, Clark and Boser (1989)

express disappointment in the results of their study because of "the reluctance of this group of experts to indicate that any but the most fundamental of characteristics were applicable to all mail surveys" (p. 6).

Arlene Fink and Jacqueline Kosecoff (1985), writers in the field of survey design suggest pre-contact letters before mailing self-administered questionnaires as a means of increasing response rate (p 46). Tim Galpin (1987) strongly suggests use of pre-contact letters. Galpin points out that the pre-contact letter explains the study, its use and importance, and informs the respondent that a questionnaire will arrive soon after receipt of the pre-contact letter (p. 4). Galpin (1987) also discusses follow-ups to the questionnaire. Galpin writes: "Follow-up contacts via mail do not appear to have to be in the form of a letter" (p. 5). He points out that a post-card can be used.

Timing is also important. In an interview, Randal Finfrock, Coordinator of Institutional Research and Planning at Westmoreland County Community College, recommended that the mailing take place after Labor Day, 1991 and before Thanksgiving, 1991. Finfrock advises avoidance of major holidays.

An overview of survey design and implementation procedures in mail surveys is presented by Don Dillman (1983) in the essay "Mail and Other Self-Administered Questionnaires." Dillman recommends "a heavy dose of

personalization applied in a variety of ways" for the mailing procedures (p. 367). Among the ways is the "use of letterhead stationery from a legitimate sponsor" (p. 361), a real signature on the cover letter, pre-paid return envelopes, and first-class postage.

Section Three of Designing and Conducting Survey Research: A Comprehensive Guide by Louis M. Rea and Richard A. Parker (1992) is devoted to analyzing and reporting survey results. Rea and Parker set up a step-by-step guide for the reporting of survey results and explain the use of graphic displays for presenting data.

Paul V. Anderson (1985) devotes considerable attention to analysis of the data gathered, dividing the section into descriptive statistics and inferential statistics. Under the latter section, Anderson (1985) advises: "Because inferential statistics constitute a very technical field, it is wise to enlist the advice of an expert" (p. 493). Carol E. Baker, (1992), Director, Office of Measurement and Evaluation of Teaching at the University of Pittsburgh, one of the experts consulted, recommended the use of Statistical Analysis in Psychology and Education by George A. Ferguson (1966) for guidance on testing the significance of the difference between proportions.

Chapter 3

METHODOLOGY AND PROCEDURES

Problem Solving Methodology

The problem solving methodology used for this study was the research methodology. The design of research was descriptive and inferential.

The literature on survey research was reviewed. The review included literature on the general procedures for conducting surveys and literature on surveys conducted in the field of technical communications in specific. A previous study upon which this researcher focused is a classic study by Paul Anderson (1986), "Research into the Amount, Importance, and Kinds of Writing Performed on the Job by Graduates of Seven University Departments that Send Students to Technical Writing Courses," previously cited in this paper. Anderson's study provided one of the models used for developing the survey. Richard K. Davis's 1975 study, also previously cited, provided another model.

The next step taken was the preparation of a preliminary proposal outlining the purpose and use of the study. This proposal was presented to the appropriate Westmoreland County Community College officials: Linda Kaminski, Vice-President/Academic Affairs, and Peggy Yusten, Vice-President/College Support Services. Approval of the study was given, and support through provision of needed information was granted.

Data Collection

Data collection was accomplished by means of a mail survey.

Population

The population surveyed was Westmoreland County Community College alumni who earned degrees in the Criminal Justice and Drafting and Design Technology fields from 1972 through 1990.

The Criminal Justice and Drafting and Design Technology fields were selected for comparison for the following reasons:

1. Each program leads to an A.A.S. degree.

2. Each program specifies Technical Communications as an English requirement.

3. Each program has been in existence since the founding of the college. The first graduates of Westmoreland County Community College were graduated in 1972.

On July 22, 1991, the college provided a computer-generated list of 391 names and addresses of all Westmoreland County Community College graduates in the Criminal Justice and Drafting Design fields from 1972 through May of 1991. There were 235 with a major in the Criminal Justice field and 156 with a major in the Drafting and Design field.

The researcher had predetermined that 1991 graduates would not be included; therefore, the names of 22 graduates

from May of 1991 were pulled from the list. This left a total of 369 graduates to be surveyed: 219 from Criminal Justice and 150 from Drafting and Design.

Instruments

As recommended by Fink & Kosekoff (1985), a pre-contact letter was used. As a means of increasing response rate and determining validity of twenty-year-old addresses, the pre-contact letters were mailed before mailing the self-administered questionnaires. See Appendix A for a copy of the pre-contact letter.

A specifically designed and pre-tested questionnaire developed by Judith Metzgar (1992) in a previous study was used. See Appendix B for a copy of the questionnaire. The questionnaire was accompanied by a letter describing the survey, its purpose, and how the information would be used. See Appendix C for a copy of the letter accompanying the questionnaire.

As recommended by Galpin (1987), a follow-up post-card was sent out to graduates who did not respond to the first mailing. See Appendix D for a copy of the follow-up post-card.

Procedure

The survey was conducted by mail over a two-month period. At the recommendation of Randal Finfrock, Coordinator/Institutional Research and Planning at the college, the mailings took place after Labor Day, 1991 and before Thanksgiving, 1991.

On September 3, 1991, the pre-contact letter was sent to 369 graduates. Envelopes were hand addressed, and first-class postage was used.

On September 18, 1991, using a list revised by use of the pre-contact letters, 310 questionnaires were mailed: 188 to Criminal Justice majors and 122 to Drafting and Design majors. The questionnaires were accompanied by a cover letter. Dillman's (1983) recommendations were followed: the cover letters were hand signed, letter-head stationery was used, return envelopes were provided, and first-class postage was used.

On October 5, 1991, follow-up post cards were mailed to graduates for whom the log showed no response to this point.

Returned questionnaires were sorted and those determined unusable were removed. Working in the designated fields (criminal justice or drafting and design) was the condition required for usability.

The research questions and hypotheses in the original proposal were then re-examined for relevance to the purpose of the study: comparing writing needs of criminal justice and drafting graduates to determine whether the present technical communications course was meeting the needs of present students. Six of the questions and corresponding hypotheses were retained.

Treatment of the Data

Following Anderson's (1985) recommendation to enlist the assistance of experts in inferential statistics, three

statistics experts were consulted. Data analysis was accomplished with the assistance of Alan Bluman, Ph. D., Gary Severance, Ph. D., and Carol Baker, Ph. D.

Inferential statistics were used to calculate significant differences between the two targeted fields. The independent variables were the criminal justice and drafting graduates; the dependent variables were importance of writing, frequency of writing, types of written communication, types of visuals, kinds of audience, and kinds of concerns. For statistical tests, the .05 and .01 levels of significance were used.

The following null hypotheses were tested:

1. There is no significant difference in the importance of writing to a graduate of the Criminal Justice program and the importance of writing to a graduate of the Drafting and Design program.

Statistical test used was a Chi-square test at the .05 level of significance.

2. There is no significant difference in the amount of writing done on the job by graduates of the Criminal Justice program and the amount of writing done on the job by graduates of the Drafting and Design program.

Statistical test used was a Chi-square test of independence at the .05 level of significance.

3. There is no significant difference in the types (memos, letters, proposals, reports) of required writing reported by the criminal justice graduate as compared to the

types of required writing reported by the drafting and design graduate.

With the assistance of Carol Baker, this hypothesis was revised to read: There is no significant difference in the proportion of criminal justice and drafting graduates reporting use in their jobs of each of twelve types of written communication. Baker (1992) pointed out that Ferguson (1966) says "the significance of the difference between two proportions can be tested with the Chi-square test of independence" (p. 205). This hypothesis was tested with the Chi-square test of independence. A t-test of means was also done to test whether the average number of forms of communication reported by the two groups differed significantly.

The remaining three null hypotheses were patterned after Baker's design.

4. There is no significant difference in the proportion of criminal justice and drafting graduates reporting use in their jobs of each of six types of visuals to accompany their documents.

Statistical test used was the Chi-square test of independence at the .01 level of significance.

5. There is no significant difference in the proportion of criminal justice and drafting graduates reporting writing in their jobs for each of three types of readers.

Statistical test used was the Chi-square test of independence at the .05 level of significance.

6. There is no significant difference in the proportion of criminal justice and drafting graduates reporting concern about six types of writing skills.

Statistical test used was the Chi-square test of independence at the .05 level of significance.

Descriptive statistics was the statistical tool used to summarize distributions of data. Frequency distributions and percentages were calculated, and means were noted.

The results were charted on tables and computer-produced graphs.

Limitations

A limitation should be noted. Surveys are reactive in nature. According to Isaac and Michael (1987), surveys "only tap respondents who are accessible and cooperative" (p. 128). Older addresses, as were used in this study, may result in a nonrepresentative return.

It should also be noted that self-reported data is subjective; the responses reflect answers to the survey questions as the person answering interprets the question and perceives the answer. As Isaac and Michaels (1987) point out, one of the disadvantages of mailed questionnaires is that there is "no assurance the questions were understood" (p. 130).

The population of the survey was limited to graduates of Westmoreland County Community College; therefore, all conclusions are limited to graduates of Westmoreland County Community College.

Assumptions

An assumption made was that a graduate in the targeted field would be or would have been an active practitioner in the field. This assumption was dealt with by asking the respondent his/her occupation. Responses from participants no longer active in the field were removed from the data analysis.

Chapter 4

RESULTS

The results of the study are divided into two sections. One section deals with the procedures used in conducting the survey; the other section deals with the data obtained in response to the research questions used in the survey. Procedural results will be discussed first, followed by results obtained from the collected data.

As a result of the review of the literature, certain procedures were selected for conducting the survey. Those procedures included use of a pre-contact letter, special attention to matters such as first-class postage, the hand-signing accompanying letters, and the use of post-cards as follow-up mechanisms. The review of the literature also resulted in the selection of two models (Anderson, 1986 & Davis, 1975) for consultation in preparation of the survey.

On September 3, 1991, a pre-contact letter was sent to 369 graduates. The pre-contact letter removed 59 names from the original list; 57 graduates were not reached by the pre-contact letter due to faulty addresses, and two graduates were reported as deceased.

On September 18, 1991, 310 questionnaires were mailed: 188 to Criminal Justice majors and 122 to Drafting and Design majors. Between September 18, 1991 and October 5, 1991, 80 questionnaires were returned by the graduates. This mailing also produced 12 additional pieces of material returned by the Post Office as undeliverable with no

forwarding addresses. Two additional deaths of graduates were reported by letter.

On October 5, 1991, follow-up post cards were mailed to graduates for whom the log showed no response to this point. Seven of the follow-up cards were returned by the Post Office as undeliverable due to address, but one of those was a duplicate of the pre-contact letter returned after the questionnaire mailing.

Thirty-five more questionnaires were returned during the period from October 8, 1991 through November 1, 1991.

A total of 115 of the 310 questionnaires in the original mailing were returned. This is a 37 percent response rate. When the number of questionnaires mailed (310) is reduced by two late-returned pre-contact letters, two reported deaths, ten returned questionnaires, and six returned follow-up cards in order to have a more valid account of possible receipt by the graduate of the questionnaire, the log indicates that 290 graduates actually received questionnaires. This means a 39.6 percent return.

Of the 115 people who responded through the questionnaire, 62 were working in the field for which they had prepared. Fifty were not working in the field for which they had prepared; three responded that they had never been in the field the computer identified for them. The questionnaires of those graduates not working in the field were eliminated from the data analysis since their responses could not be used for comparison purposes as pre-determined

by the purpose of the study which was to compare the writing on the job of people in the criminal justice and drafting fields. Sixty-two questionnaires were retained. Forty of the 62 were responses from the Criminal Justice graduates; 22 were responses from the Drafting and Design graduates.

The range of number of years in the field reported by responding Criminal Justice graduates was a minimum of one year and a maximum of 34; the mean was 11.9 years in the field; the median was 11. The range of number of years in the field reported by Drafting and Design graduates was a minimum of one year and a maximum of 25; the mean was 7.5 years in the field; the median was 4.

The six research questions provided a framework by which the data were analyzed. The report on the results is organized around the questions.

Research question number one asked if there is a significant difference in the difference in the importance of writing to graduates of the criminal justice program and the drafting and design program. Question number G-1 on the survey instrument asked the respondents to answer the question "How important is writing to performing your job?" There were four possible responses: very important; some importance; little importance; no importance. Responses show that 38 of the 40 CRJ graduates (95 percent) marked very important, 1 (2.5 percent) marked some importance, and 1 (2.5 percent) marked little importance. Of the 22 Drafting graduates, 9 (41 percent) marked very important, 12

(54.5 percent) marked some importance and 1 (4.5 percent) marked little importance. None of the responding graduates of either field marked no importance. See Figure 1.

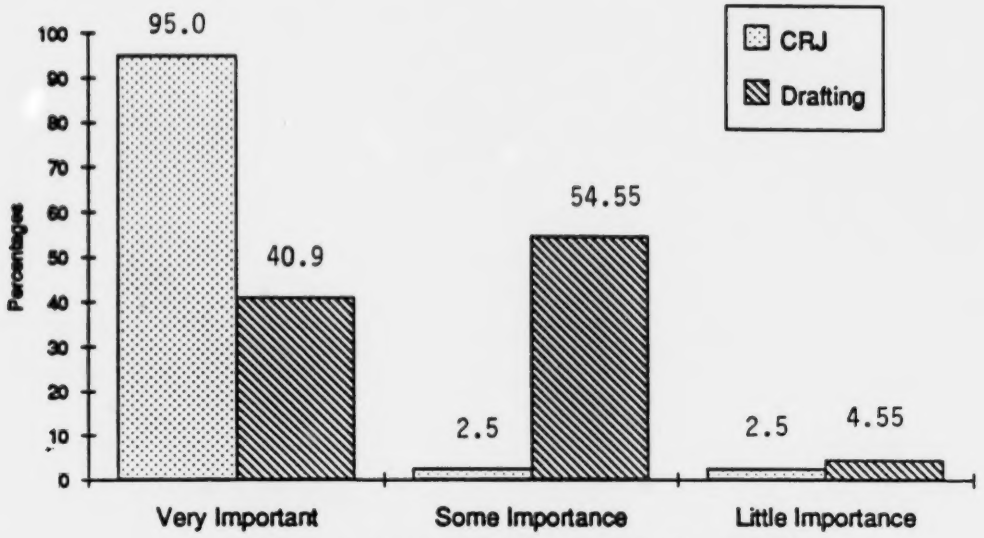

Figure 1 Importance of Writing to Performing Job

In order to test the significant difference in the importance of writing to a graduate of the Criminal Justice program and the importance of writing to a graduate of the Drafting and Design program, a Chi-square test of independence was used on the responses of the two groups pertaining to question G-1. See Table 1.

Table 1

Perceptions of the Importance of Writing to Criminal Justice and Drafting Graduates

	CRJ		Drafting	
Importance	N	%	N	%
Very	38	95.00	9	40.90
Some	1	2.50	12	54.55
Little	1	2.50	1	4.55

The Chi-square test value was 23.998 and with two degrees of freedom. This was significant at the 0.05 level. The critical value is 5.991. Therefore, there is a significant difference in the perception of the importance of writing to a graduate of the Criminal Justice program and the importance of writing to a graduate of the Drafting and Design program.

The second research question asked: Is there a difference in the amount of time spent writing on the job by graduates of the Criminal Justice program and graduates of the Drafting and Design program?

Survey instrument question B-1 asked the respondents "How often do you write as a part of your job?" The graduates were asked to reflect upon the previous two to four week period and determine how often they write as a

part of their jobs. They were offered a choice of responses including the following: every day; at least twice a week; once a week; at least twice a month; once a month; seldom; never.

Thirty-eight of the 40 criminal justice graduates (95 percent) responded that they write every day; one graduate (2.5 percent) reported writing at least twice a week; and one (2.5 percent) reported writing once a week. Fourteen of the 22 responding drafting graduates (63.6 percent) reported writing every day; four (18.2 percent) responded that they write at least twice a week; two drafting graduates (9.1 percent) reported writing at least once a week; one drafting graduate (4.55 percent) reported writing at least twice a month; and one (4.55 percent) reported writing seldom. None of the respondents responded <u>never</u> to the question. See Figure 2.

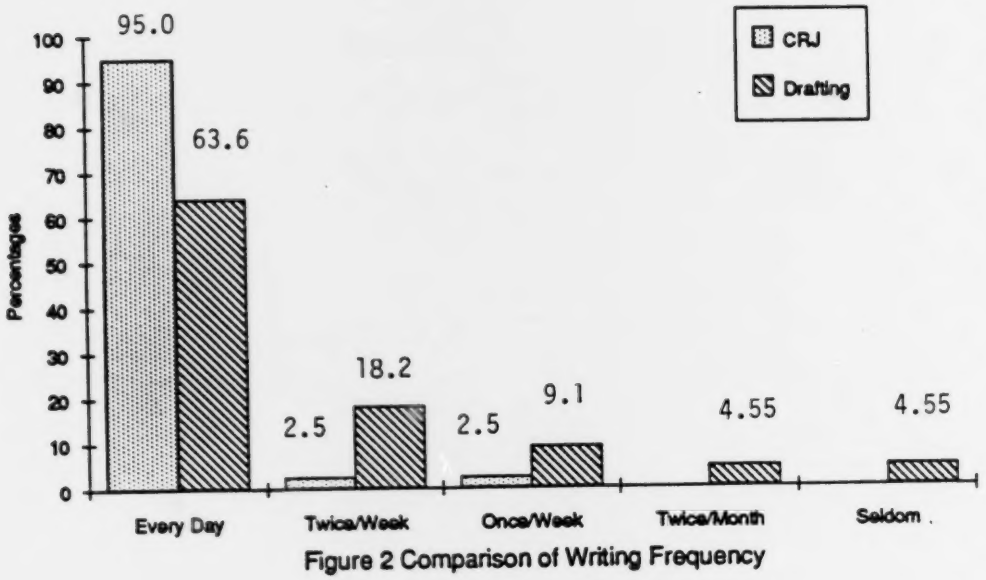

Figure 2 Comparison of Writing Frequency

A second question on the questionnaire also dealt with the amount of writing the graduates do on the job. Respondents were asked to state the percentage of each day spent writing. Question B-2 asks: "What percentage of each day would you say you spend writing?"

Figure 3 shows the percentages of each day spent writing reported by criminal justice graduates.

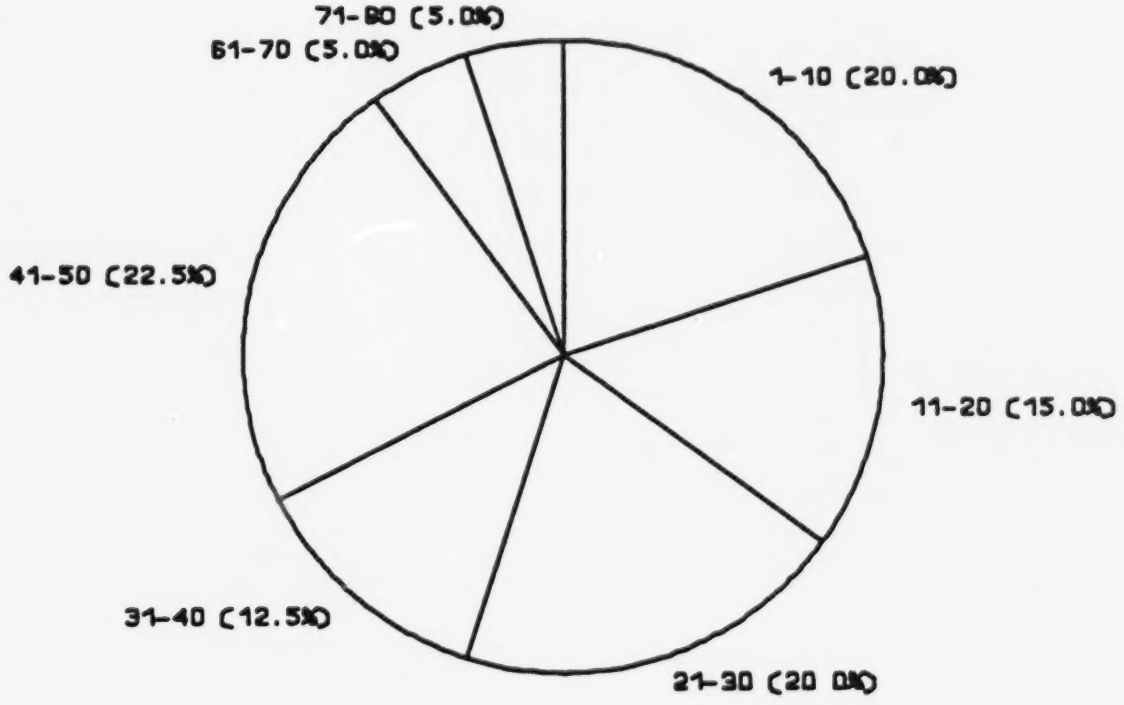

Figure 3 Percentage of Each Day CRJ Graduates Spend Writing

In order to test for significant difference in the amount of writing done by graduates of the Criminal Justice program and the writing done by graduates of the Drafting and Design program, a Chi-square test of independence was used on the responses of the two groups to question B-1. Table 2 shows the frequencies of responses given.

Table 2

Frequency of Writing Reported by Criminal Justice and Drafting Graduates

	CRJ		Drafting	
Frequency	N	%	N	%
Every Day	38	95.00	14	63.60
2xWeek	1	2.50	4	18.20
1xWeek	1	2.50	2	9.10
1xMonth	0	0.00	1	4.55
Seldom	0	0.00	1	4.55

The Chi Square test value was 10.903 and with 4 degrees of freedom. This was significant at the 0.05 level. The critical value was 9.488. Therefore there is a significant difference in the amount of writing done by graduates of the Criminal Justice program and the writing done by graduates of the Drafting program.

The responses of the criminal justice graduates ranged from 1-10 percent of each day reported by 20 percent of criminal justice graduates to 71-80 percent of each day reported by 5 percent of the criminal justice graduates. Fifteen percent reported writing 11-20 percent of each day, twenty percent reported writing 21-30 percent of each day; twelve and a half percent reported writing 31-40 percent of each day, 22.5 percent reported writing 41-50 percent of each day, and 5 percent reported writing 61-70 percent of each day. None of the criminal justice graduates reported writing 51-60, 81-90, or 91-100 percent of each day.

Percentages of each day drafting graduates reported writing ranged from 1-10 percent reported by 64 percent of the drafting graduates to 81-90 percent of each day reported by 9 percent of the drafting graduates. Eighteen percent reported writing 11-20 percent of each day, 4.5 percent reported writing 41-50 percent of each day, and 4.5 percent reported writing 71-80 percent of each day. None of the drafting graduates reported writing 21-30, 31-40, 51-60, 61-70, or 91-100 percent of the day.

Figure 4 shows the percentages of each day spent writing reported by drafting graduates.

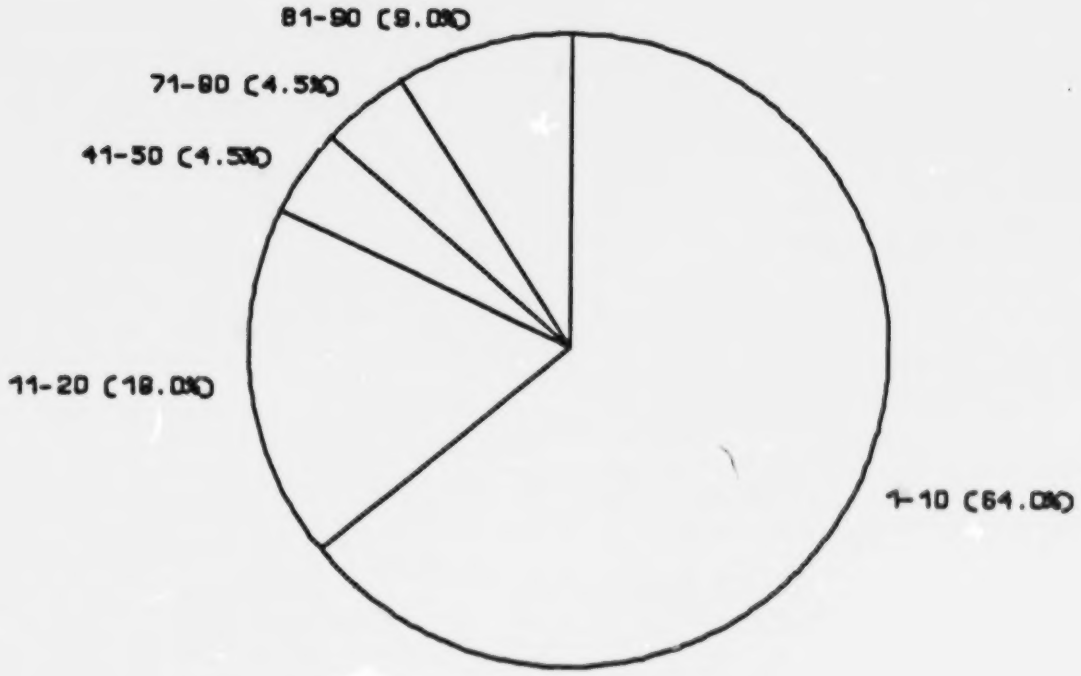

Figure 4 Percentage of Each Day Drafting Graduates Spend Writing

The third research question was: Is there a difference in the types (memos, letters, proposals, reports) of writing required of the criminal justice graduate as compared to the types of writing required of the drafting graduate of Westmoreland County Community College? Question number D-1 on the questionnaire is phrased: "Twelve forms of written communication are presented here. Please check the forms of communication you have prepared on the job." The participants were not restricted on the number of communication forms they could check.

Figure 5 shows a comparison of the percentages of criminal justice and drafting graduates reporting use of each of the twelve types of written communication.

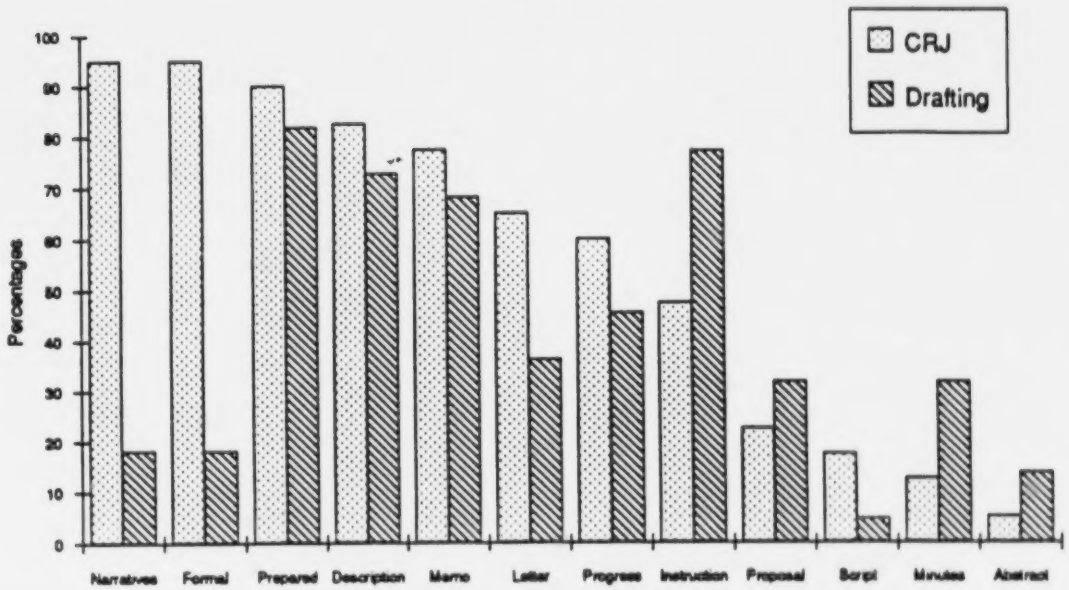

Figure 5 Comparison of Types of Written Communication

Ninety-five percent of criminal justice graduates reported writing both narrative and formal reports, while 18.2 percent of drafting graduates reported writing narrative and formal reports. Ninety percent of criminal justice graduates reported using prepared forms, while 81.8 percent of drafting graduates reported using prepared forms. Description is reported by 82.5 percent of criminal justice graduates as a type of written communication they prepare; description is reported as prepared by 72.7 percent of

drafting graduates. The memo is reported as being used by 77.5 percent of criminal justice graduates; the memo is used by 68.2 percent of drafting graduates. Sixty-five percent of criminal justice graduates reported use of the letter as a form of written communication, and 36.4 percent of drafting graduates use the letter. Sixty percent of criminal justice graduates report preparing progress reports, while 45.5 percent of drafting graduates report preparing progress reports. Instructions are prepared by 47.5 percent of criminal justice graduates; instructions are reported as being prepared by 77.3 percent of drafting graduates. Proposals are prepared by 22.5 percent of criminal justice graduates; proposals are prepared by 31.8 percent of drafting graduates. Scripts for presentations are prepared by 17.5 percent of criminal justice graduates; scripts are prepared by 4.5 percent of drafting graduates. Meeting minutes are prepared by 12.5 percent of criminal justice graduates; minutes are prepared by 31.8 percent of drafting graduates. Five percent of criminal justice graduates write abstracts, while 13.6 percent of drafting graduates write abstracts.

In order to test for significant difference, the following null hypothesis was tested: There is no significant difference in the proportion of criminal justice and drafting graduates reporting use in their jobs of each of twelve types of written communication. The significance of the difference between two proportions was tested with

the Chi-square test of independence. Table 3 shows the results of the Chi-square test of independence.

Table 3

Types of Communication Reported Being Used by Criminal Justice and Drafting Graduates

	CRJ		Drafting		
Type	N	%	N	%	Chi-square
Prepared forms	36	90.0	18	81.8	0.85
Memos	31	77.5	15	68.2	0.64
Narratives	38	95.0	4	18.2	38.33 **
Instructions	19	47.5	17	77.3	5.17 *
Abstracts	2	5.0	3	13.6	1.43
Description	33	82.5	16	72.7	0.82
Progress report	24	60.0	10	45.5	1.21
Proposals	9	22.5	7	31.8	0.64
Meeting minutes	5	12.5	7	31.8	3.39
Formal reports	38	95.0	4	18.2	38.33 **
Letters	26	65.0	8	36.4	4.70 *
Scripts for Presentations	7	17.5	1	4.5	2.12

* $p < .05$

** $p < .01$

The critical value was 3.84 for $p = .05$ and 6.64 for $p = .01$ with one degree of freedom.

For four of the 12 types of communication, there was a significant difference between the proportion of Criminal Justice and drafting graduates reporting use. A higher proportion of criminal justice graduates reported preparing narratives, formal reports, and letters. A higher proportion of drafting graduates reported preparing instructions. For the other eight types of communication, there was not a significant difference between the proportion of criminal justice and drafting graduates.

A t-test of means was done to examine whether the average number of forms of communication reported by the two groups differed significantly. The results are reported in Table 4.

Table 4

Means, Standard Deviations and T-Test on Total Number of Forms of Communication Used on Job

Type of Graduate	N	Range	M	SD	t
Criminal Justice	40	1-12	6.72	2.09	3.16 *
Drafting	22	2-9	5.00	2.00	

* $p < .01$

The t value of 3.16 is significant at the .01 level. The criminal justice graduates reported preparing more forms of communication on the average (6.72) than the drafting graduates (5.00).

The fourth research question was related to the differences in the uses of graphics and tables to accompany written documents produced by graduates of the Criminal Justice program and the Drafting and Design program. Graduates were presented with six types of visuals and asked to check those used in documents on the job (Question E-1).

Figure 6 shows a comparison of percentages of criminal justice graduates and drafting graduates reporting use of visuals in documents they prepare.

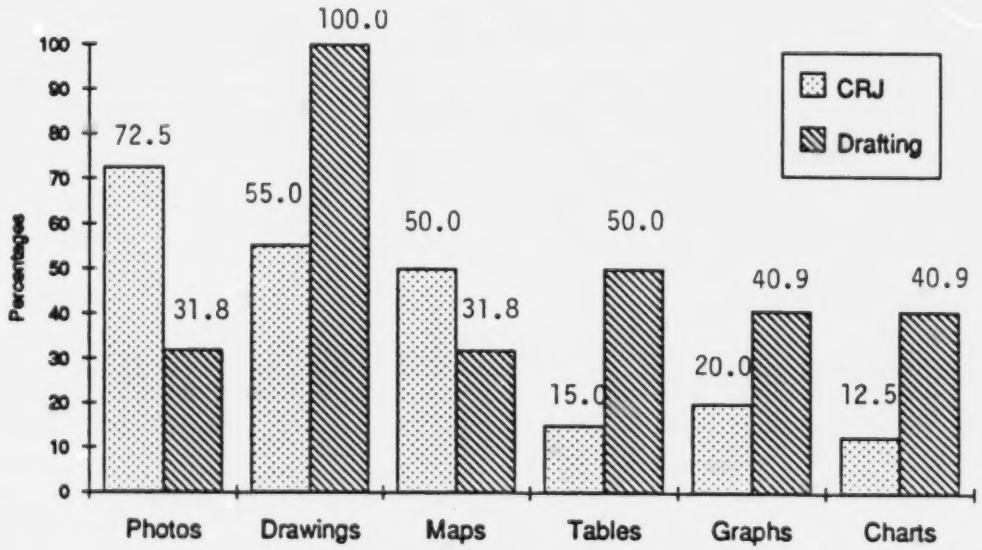

Figure 6 Types of Visuals Used

Photographs are reported being used by 72.5 percent of criminal justice graduates; photographs are reported being used by 31.8 percent of drafting graduates. While 55 percent of criminal justice graduates reported using drawings, 100 percent of drafting graduates reported using drawings. Fifty percent of criminal justice reported using maps compared to 31.8 percent of drafting graduates. Tables are reported being used by 15 percent of criminal justice graduates and by 50 percent of drafting graduates. Twenty percent of criminal justice graduates reported using graphs, while 40.9 percent of drafting graduates reported using graphs. Charts are reported being used by 12.5 percent of criminal justice graduates and by 40.9 percent of drafting graduates.

In order to test for significant difference, the following hypothesis was tested. There is no significant difference in the proportion of criminal justice graduates and drafting graduates reporting use in their jobs of each of six types of visuals to accompany their documents. The Chi-square test of independence was used. Table 5 shows the results of the Chi-square test of independence.

Table 5

Types of Visuals Reported Being Used by Criminal Justice and Drafting Graduates

	CRJ		Drafting		
Type	N	%	N	%	Chi-square
Photographs	29	72.5	7	31.8	9.65 **
Drawings	22	55.0	22	100.0	13.95 **
Maps	20	50.0	7	31.8	1.91
Tables	6	15.0	11	50.0	8.74 **
Graphs	8	20.00	9	40.9	3.12
Charts	5	12.5	9	40.9	6.55 **

** $p < .01$

The critical value was 3.84 for $p = .05$ and 6.63 for $p = .01$ with one degree of freedom.

For four of the seven types of visuals, there was a significant difference between the proportion of criminal ljustice and drafting graduates reporting use. A higher proportion of criminal justice graduates reported using photographs. A higher proportion of drafting graduates reported using drawings, tables, and charts. There was no significant difference in the proportion of graduates reporting use of maps or graphs.

Frequency of use was also questioned. Question E-2 asked the respondents: "How often do you use visuals in your documents?" A blank was provided for response. Criminal justice graduates' responses ranged from zero to ninety percent of the time. Drafting graduates' responses ranged from ten percent to one hundred percent of the time.

Table 6 shows that the largest percentage of criminal justice graduates (52.7 percent) reported use of visuals 0-10 percent of the time, while the largest percentage of drafting graduates (33.3) reported using visuals 91-100 percent of the time. The second largest percentage of the criminal justice graduates responding to this question (13.9 percent) reported use of visuals both 21-30 and 41-50 percent of the time. The second largest percentage of drafting graduates was 23.8 percent reporting use of visuals 0-10 percent of the time. See Table 6 for a comparison of the criminal justice and drafting graduates responses.

Table 6

Comparison of Frequency of Graphics Use Reported by CRJ and Drafting Graduates

	Program			
	Criminal Justice		Drafting	
Percentages	N[a]	%	N[b]	%
0-10	19	52.7	5	23.8
11-20	4	11.1	0	0
21-30	5	13.9	3	14.3
31-40	1	2.8	0	0
41-50	5	13.9	1	4.8
51-60	0	0	1	4.8
61-70	0	0	0	0
71-80	1	2.8	1	4.8
81-90	1	2.8	3	14.3
91-100	0	0	7	33.3

[a] To Question E-2, 36 of 40 criminal justice graduates responded.

[b] To Question E-2, 21 of 22 drafting graduates responded.

When asked the question "How important are visuals to someone working in your field?" (E-4), 21 (95.5 percent) of drafting graduates responded "very important," and 1 (4.5 percent) responded "some importance." None of the drafting graduates marked "little" or "no importance." Of the 38

criminal justice graduates who responded to this question, 25 (65.8 percent) marked "very important," 8 (21.1 percent) marked "some importance," 3 (7.9 percent) marked "little importance," and 2 (5.2 percent) marked "no importance."

Audience was the focus of research question five. Is there a difference in the audience for whom the criminal justice graduate writes and the audience for whom the drafting and design graduate writes? Question C-1 on the survey asks: "For whom do you write on the job? Who will be using your work? The respondents were presented with three categories of readers: themselves, others inside their immediate organizations, and others outside of their immediate organizations.

Responses showed that 97.5 percent of criminal justice graduates write for themselves; responses showed that 100 percent of the drafting graduates write for themselves. One hundred percent of the criminal justice graduates reported that they write for others inside their immediate organizations; eight-six percent of the drafting graduates write for others inside their immediate organizations. Eighty percent of criminal justice graduates and 72.7 percent of drafting graduates write for others outside their immediate organizations.

Figure 7 shows a comparison of the types of readers reported by the respondents.

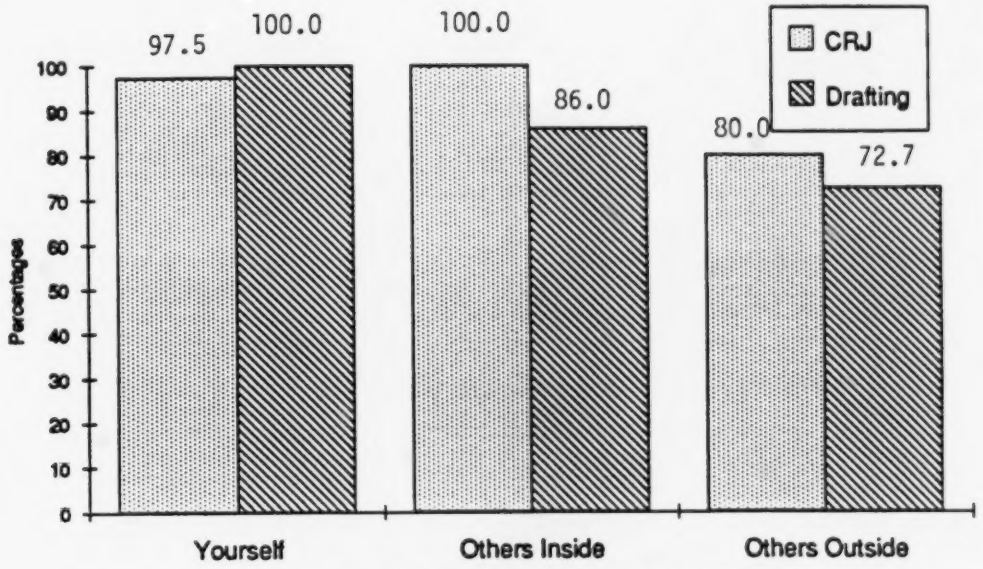

Figure 7 Comparison of Types of Readers

In order to test for significant difference in the audience for whom the criminal justice and drafting graduates write, the following null hypothesis was tested. There is no significant difference in the proportion of criminal justice and drafting graduates reporting writing in their jobs for each of three categories of readers. The significance of the difference between two proportions was tested with the Chi-square test of independence. Table 7 shows the results of the Chi-square test of independence.

Table 7

Types of Readers Reported by Criminal Justice and Drafting Graduates

	CRJ		Drafting		
Type	N	%	N	%	Chi-square
Yourself	39	97.5	22	100.0	.56
Others Inside	40	100.0	19	86.3	5.73 *
Others Outside	32	80.0	16	72.7	.43

* $p < .05$

The critical value was 3.84 for $p = .05$ with one degree of freedom.

For one of the categories of readers, there was a significant difference between the proportion of criminal justice graduates and drafting graduates reporting. A higher proportion of criminal justice graduates reported writing for other readers inside the organization. There was no significant difference in the proportion of graduates reporting writing for themselves or for others outside the organization.

Is there a difference in the importance of specific writing skills to graduates of the Criminal Justice program and graduates of the Drafting and Design program? The

questionnaire contained two questions which were intended to elicit data for analyzation in providing an answer to that reasearch question.

Question G-2 asked "What skills do you consider important to preparing written communications in your field? Respondents were asked to rate importance level of each of thirteen skills. Choices offered were the following: very important, some importance, little importance and no importance.

Table 8, page 43, shows the responses of the criminal justice graduates to question G-2. The table shows the total number (N) of criminal justice graduates rating each skill, as well as the percentage of that total number marking each importance level for that skill.

Table 9, page 44, shows the responses of the drafting graduates to Question G-2, "What skills do you consider important to preparing written communications in your field?" The table shows the total number (N) of drafting graduates rating each skill, as well as the percentage of that total number marking each importance level for that skill.

Table 8

Ranking of Specific Writing Skills by Criminal Justice Graduates

Skill	Importance								
	Very		Some		Little		No		
	N	%	N	%	N	%	N	%	TR[a]
Identifying readers	17	42.5	13	32.5	5	12.5	5	12.5	40
Pre-planning	24	63.2	9	23.7	4	10.5	1	2.6	38
Sentence structure	26	66.6	12	30.8	0	0.0	1	2.6	39
Paragraphing	17	42.5	19	47.5	3	7.5	1	2.5	40
Organization of data	35	89.7	3	7.7	0	0.0	1	2.6	39
Clarity of expression	37	94.8	1	2.6	0	0.0	1	2.6	39
Vocabulary choice	24	60.0	12	30.0	3	7.5	1	2.5	40
Objectivity	27	69.2	9	23.1	2	5.1	1	2.6	39
Accuracy	40	100.0	0	0.0	0	0.0	0	0.0	40
Editing/revising	13	32.5	20	50.0	4	10.0	3	7.5	40
Using correct formats for specific documents	22	57.9	12	31.5	2	5.3	2	5.3	38
Layout and design	9	25.0	16	44.4	6	16.7	5	13.9	36
Using visuals	9	22.5	20	50.0	8	20.0	3	7.5	40

[a]Number of graduates responding to each item

Table 9

Ranking of Specific Writing Skills by Drafting Graduates

Skill	Importance: Very N	Very %	Some N	Some %	Little N	Little %	No N	No %	TR[a]
Identifying readers	9	40.9	10	45.5	3	13.6	0	0.0	22
Pre-planning	11	50.0	6	27.3	5	22.7	0	0.0	22
Sentence structure	9	40.9	9	40.9	3	13.6	1	4.6	22
Paragraphing	3	13.6	14	63.6	4	18.2	1	4.6	22
Organization of data	21	95.4	1	4.6	0	0.0	0	0.0	22
Clarity of expression	20	90.9	2	9.1	0	0.0	0	0.0	22
Vocabulary choice	8	36.4	14	63.6	0	0.0	0	0.0	22
Objectivity	13	59.1	7	31.8	2	9.1	0	0.0	22
Accuracy	21	95.4	1	4.6	0	0.0	0	0.0	22
Editing/revising	11	50.0	7	31.8	3	13.6	1	4.6	22
Using correct formats for specific documents	9	40.9	9	40.9	3	13.6	1	4.6	22
Layout and design	16	72.7	4	18.2	2	9.1	0	0.0	22
Using visuals	15	71.4	5	23.8	1	4.8	0	0.0	21

[a]Number of graduates responding to each item

Figure 8 compares the responses of the graduates.

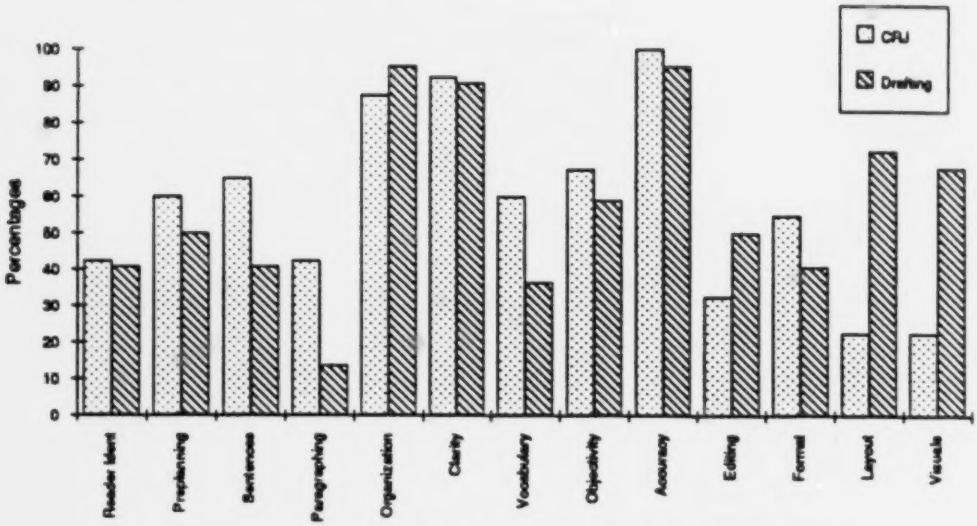

Figure 8 Skills Considered Very Important to Preparing Written Communications

One hundred percent of criminal justice graduates responding rated accuracy as very important; of the reporting drafting graduates, 95.4 percent rated accuracy as very important. Clarity of expression was rated as very important by 94.8 percent of criminal justice graduates; clarity of expression was rated very important by 90.9 percent of drafting graduates. Of criminal justice graduates responding, 89.7 percent rated organization of data as very important. Organization of data was rated very important by 95.4 percent of drafting graduates. Identifying readers was considered very important by 42.5

percent of criminal justice graduates responding and 40.9 percent of responding drafting graduates. Preplanning was marked as very important by 63.2 percent of criminal justice graduates and 50 percent of drafting graduates. Sentence structure was marked very important by 66.6 percent of criminal justice graduates, and 40.9 percent of drafting graduates marked sentence structure very important. Paragraphing was marked very important by 42.5 percent of criminal justice and 13.6 percent of drafting graduates. Sixty percent of criminal justice and 36.4 percent of drafting graduates marked very important for vocabulary choice. Objectivity was rated very important by 69.2 percent of criminal justice graduates and 59.1 percent of drafting graduates. Editing was considered very important by 32.5 percent of criminal justice and 50 percent of drafting graduates. Using correct formats was rated very important by 57.9 percent of criminal justice graduates and 40.9 percent of drafting graduates. Layout and design was marked very important by 25 percent of criminal justice graduates; layout and design was marked very important by 72.7 percent of drafting graduates. Skill in using visuals was marked very important by 22.5 percent of criminal justice and 71.4 percent of drafting graduates.

Question C-2 asked "What are your major concerns about your writing when you present it to a reader such as you have identified? Check two." When respondents were confined to two selections, clarity and accuracy were the

two concerns most frequently checked by both criminal justice and drafting graduates. Of criminal justice graduates, 87.5 percent percent of the graduates selected accuracy as one of the chief concerns, and 77.5 percent selected clarity. Of drafting graduates, 63.6 percent selected accuracy as one of the chief concerns, and 68.2 percent selected clarity. Respondents' answers are presented in Figure 9.

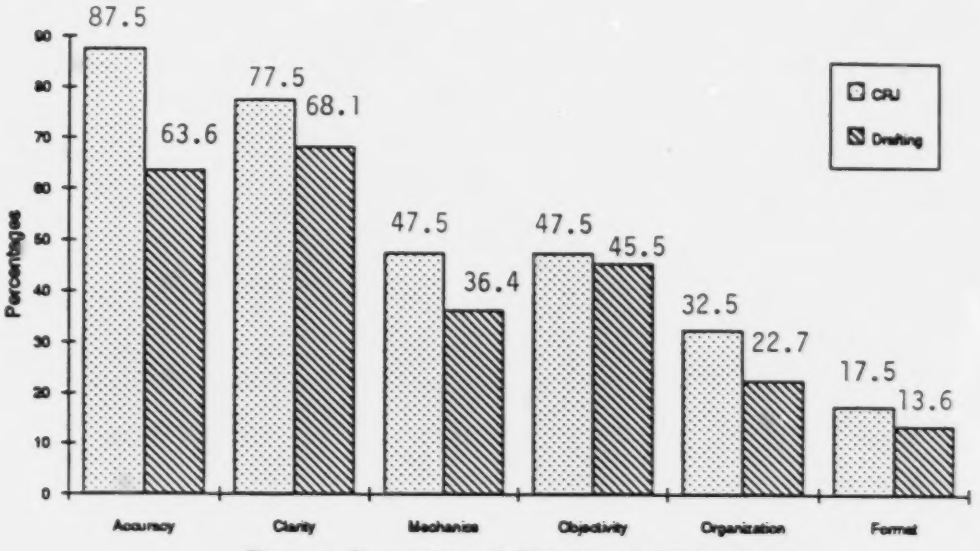

Figure 9 Comparison of Concerns of Respondents

Responses to this question were also used to test the null hypothesis: There is no significant difference in the proportion of criminal justice graduates and drafting graduates reporting two of six different concerns about writing on the job. The significance of the difference

between the two proportions was tested with the Chi-square test of independence. Table 10 shows the results of the test.

Table 10

Types of Concerns About Writing Reported by Criminal Justice and Drafting Graduates

	CRJ		Drafting		
Type	N	%	N	%	Chi-square
Clarity	31	77.5	15	68.2	.64
Objectivity	19	47.5	10	45.5	.02
Accuracy	35	87.5	14	63.6	4.88 *
Organization	13	32.5	5	22.7	.66
Format	7	17.5	3	13.6	.16
Mechanics	19	47.5	8	36.4	.72

* $p < .05$

The critical value was 3.84 for $p = .05$ with one degree of freedom.

For one of the concerns there was a significant difference between proportions of the groups responding. That concern was accuracy. A significantly higher proportion of criminal justice graduates than drafting graduates reported accuracy as a concern. For the remaining

concerns: clarity, objectivity, organization, format, and mechanics, there was no significant difference between proportions of the two groups responding.

Two opinions were asked directly on the questionnaire. Questions H-1 asked "How important do you consider a writing course in college?" The percent of criminal justice graduates responding "very important" was 87.5 percent. Fifty percent of drafting graduates checked "very important." None of the graduates of either program checked "no importance. Table 11 shows the numbers and percentages.

Table 11

Responses of Reporting Graduates Concerning Importance of a Writing Course in College

	CRJ		Drafting	
Importance	N	%	N	%
Very	35	87.5	11	50.0
Some	4	10.0	10	45.5
Little	1	2.5	1	4.5
No	0	0.0	0	0.0

Question H-2 asked respondents: "Do you recommend a second-level writing course specifically targeted to people preparing to go into your field?"

Ninety percent of the criminal justice graduates responding to the survey checked "Yes." Five percent responded "No." Five percent were undecided. Of the drafting graduates responding, 45.5 percent marked "Yes." Thirty-two percent marked "No," 18 percent marked "Undecided," and one respondent did not mark any of the three choices. Table 12 presents the responses.

Table 12

Responses of Reporting Graduates Concerning Recommendation of a Specifically Targeted Second-level Writing Course

	CRJ		Drafting	
Recommendation	N	%	N	%
Yes	36	90.0	10	45.5
No	2	5.0	7	32.0
Undecided	2	5.0	4	18.0
No Response	0	0.0	1	4.5

Chapter 5

DISCUSSION, CONCLUSIONS, IMPLICATIONS, AND RECOMMENDATIONS

Discussion

The literature was reviewed with two results. Methods of conducting surveys were obtained and precedent for conducting surveys to assist in course revision and determining course content was found.

Recommendations made about conducting surveys were incorporated into the present study.

On September 3, 1991, as recommended by Fink and Kosecoff (1985), a pre-contact letter was sent to 369 graduates. Sixty-one undeliverable envelopes containing the pre-contact letters were returned by September 18, 1991. Three had new addresses written or stamped on them; one was returned because the first-class postage had dropped off. Of the 61 returned envelopes, four names and addresses were obtained and retained for the mailing of the questionnaire. This meant that 57 graduates were not reached by the pre-contact letter due to faulty addresses. Two additional responses (one by telephone from a parent and one by personal letter from a wife) reported deaths of two graduates. The pre-contact letter removed 59 names from the original list.

On September 18, 1991, 310 questionnaires were mailed: 188 to Criminal Justice majors and 122 to Drafting and Design majors. Between September 18, 1991 and October 5,

1991, 80 questionnaires were returned by the graduates. This mailing also produced additional undeliverable material. Two additional pre-contact letters were returned; the questionnaires for these pre-contact letters were never returned. Three questionnaires were returned with forwarding addresses. These were readdressed and mailed again. Ten questionnaires were returned by the Post Office as undeliverable with no forwarding addresses. Two additional deaths of graduates were reported by letter. This suggested that 296 graduates had received questionnaires at this point.

On October 5, 1991, as recommended by Galpin (1987), follow-up post cards were mailed to graduates for whom the log showed no response to this point. Thirty-five more questionnaires were received after the mailing of the follow-up postcard during the period from October 8, 1991 through November 1, 1991. Seven of the follow-up cards were returned by the Post Office as undeliverable due to address, but one of those was a duplicate of the pre-contact letter returned after the questionnaire mailing.

A total of 115 of the 310 questionnaires in the original mailing were returned. This is a 37 percent response rate. When the number of questionnaires mailed (310) is reduced by two late-returned pre-contact letters, two deaths, ten returned questionnaires, and six returned follow-up cards in order to have a more valid account of possible receipt by the graduate of the questionnaire, the

log indicates that 290 graduates actually received questionnaires. This means a 39.6 percent return.

One of the noted limitations of surveys became evident. As Isaac and Michael (1987) have pointed out, a survey is limited by the fact that only accessible and cooperative respondents can be drawn upon for data. The accessibility aspect is echoed by Terry Skelton (1977) who conducted a study of community college graduates and cautioned that community college students may be difficult to locate after graduation. This present study surveyed Westmoreland County Community College graduates, some of whom had been graduated for up to nineteen years when the survey was conducted. The 39 percent return rate, representing a non-response bias, illustrates the cited limitation. This response rate is similar to the overall response rate (37%) realized by Anderson (1986) in one of the two studies acknowledged as models for the present study under discussion. Anderson's study is also based upon a survey of graduates.

Skelton (1977) and Anderson (1986) are examples of the studies located as a result of searching the literature for precedent in using surveys as a means of evaluating current courses in technical communications. Others included Davis (1975) and Glenn and Green (1983). Models chosen for study design focused on Davis (1975) who surveyed practicing engineers and Anderson (1986) who surveyed graduates of seven university departments.

Of the 115 people who responded through the questionnaire, 62 were working in the field for which they had prepared. Fifty were not working in the field for which they had prepared; three responded that they had never been in the field the computer identified for them. The questionnaires of those graduates not working in the field were eliminated from the data analysis since their responses could not be used for comparison purposes as pre-determined by the purpose of the study which was to compare the writing on the job of people in the criminal justice and drafting fields. Sixty-two questionnaires were retained. Forty of the 62 were responses from the criminal justice graduates; 22 were responses from the drafting and design graduates.

The results also provided information about the number of years in the field reported by the respondents, indicating the respondents' writing perspectives in terms of experience. The range of number of years in the field reported by criminal justice graduates was a minimum of one year and a maximum of 34; the mean was 11.9 years in the field; the median was 11. The range of number of years in the field reported by drafting and design graduates was a minimum of one year and a maximum of 25; the mean was 7.5 years in the field; the median was 4. If the responses of the two groups are put together, the results show that 25 of 62 respondents (40.3 percent) have five or less years of experience in the field. On the other hand, 59.7 percent of the 62 respondents reported they have more than five years

of experience in the field. Forty-five of 62 (72.5 percent) have spent 15 or less years on the job in their fields.

The results of analyzing the graduates' responses have shown a significant difference in the perception of criminal justice graduates and drafting graduates as to the importance of writing to their jobs. The biggest difference was in the first two categories. A significantly larger number of criminal justice graduates than drafting graduates considered writing to be very important. Ninety-five percent of the criminal justice graduates said that writing is very important to their jobs as compared to 40.9 percent of the drafting graduates. Whereas 2.5 percent criminal justice graduates said writing is of some importance to their jobs, 54.5 percent of drafting graduates said writing is of some importance to their jobs. Few of the responding graduates from either program, however, said writing is of little importance (criminal justice: 2.5 percent; drafting: 4.5 percent), and none of the respondents said writing is of no importance to their jobs.

The results of analyzing responding graduates' responses show a significant difference in the amount of time spent writing on the job by criminal justice and drafting graduates. Ninety-five percent of criminal justice graduates report writing on the job every day, while 63.6 percent af drafting graduate report writing every day. While 2.5 percent of criminal justice graduates report writing two times a week, 18.2 percent of drafting graduates

report writing two times a week. None of the criminal justice graduates responding write less than once a week, while 9.1 percent of drafting graduates reported writing twice a month and 4.5 percent reported writing seldom.

When the respondents were asked to estimate the percent of each day spent writing, similar results about the amount of time spent writing on the job were obtained. Not only did criminal justice graduates report writing every day, but the majority of WCCC criminal justice graduates (22.5 percent) reported writing at least 41-50 percent of each day. This is compared to 4.5 percent of drafting graduates reporting writing 41-50 percent of each day.

Of the twelve types of written communication presented to the respondents, significant differences were shown in the use of four. A higher proportion of Westmoreland County Community College criminal justice graduates reported preparing narratives (95 percent), formal reports (95 percent), and letters (65 percent) than drafting graduates (18.2 percent narratives, 18.2 percent formal reports, 36.4 percent letters). On the other hand, a higher proportion of WCCC drafting graduates (77.3 percent) than criminal justice graduates (47.5 percent) reported preparing instructions. For the other eight types of written communication, there was no significant difference. Over 60 percent of respondents for both criminal justice graduates and drafting graduates indicate that they prepare memos, use prepared forms, and write descriptions. Less thar 20 percent of

respondents from both groups prepare abstracts or scripts for presentation. Sixty percent of criminal justice graduates reported the use of progress reports and 45.5 percent of drafting graduates reported the use of progress reports. While 12.5 percent of criminal justice graduates reported writing meeting minutes, 31.8 percent of drafting graduates reporting writing meeting minutes. Proposals are reported being prepared by 22.5 percent of criminal justice graduates compared to 31.8 percent of drafting graduates.

On the whole, criminal justice graduates, with a range of 1 to 12, reported preparing more types of communication than did drafting graduates, with a range of 2 to 9.

There were some significant differences in four of the seven types of visuals reported used by responding graduates of the targeted programs. A higher proportion of criminal justice graduates (72.5 percent) than drafting graduates (31.8 percent) reported using photographs. A higher proportion of drafting graduates reported using drawings (100 percent), tables (50 percent), and charts (40.9 percent) than did criminal justice graduates (drawings - 55 percent, tables - 15 percent, and charts 12.5 percent).

While the results show differences in choice or need for specific types of visuals, the results also show that visuals are used by both groups of graduates to accompany written communications prepared on the job. The majority of responding criminal justice graduates (52.7 percent) reported use of visuals 0-10 percent of the time. The

majority of responding drafting graduates (33.3 percent) reported use of visuals 91-100 percent of the time.

When offered three choices of audience for whom they write, responses of Westmoreland County Community College criminal justice and drafting graduates show there is a significant difference in only one category of audience. Graduates of both programs report that they write for others inside their organizations, but criminal justice graduates report a stronger frequency of writing for others inside. One hundred percent of criminal justice graduates report writing for others inside their immediate organizations; 86 percent of drafting graduates write for others inside their immediate organizations. Graduates of both programs report writing notes for themselves: criminal justice 97.5 percent and drafting 100 percent. A large proportion of responding graduates from both programs also report writing for others outside their immediate organizations (criminal justice: 80 percent and drafting: 72.7 percent). For each audience, the percentage of all responding graduates reporting writing for that audience is over 70 percent.

Concerns with writing skills were measured by two questions on the questionnaire. One question labeled the skills involved as concerns; the other question labeled the skills as skills.

When responding to the question where skills were labeled as concerns, the respondents were asked to restrict themselves to two responses. Some respondents did restrict

themselves to two responses; others did not. Again, the limitation predicted by Isaac and Michaels surfaced in that despite pre-testing of questionnaires, self-reported data is subject to the co-operation and question interpretation of the respondents.

When asked to check two of six major concerns (clarity, accuracy, objectivity, organization, format, and mechanics) when writing for the readers they had identified, a significantly higher proportion of criminal justice graduates reported accuracy as a concern than did drafting graduates. The percentages were 87.5 percent criminal justice compared to 63.6 percent drafting. For the remaining five concerns (clarity, objectivity, organization, format, and mechanics), there was no significant difference between the responses of the two groups.

When given a list of thirteen skills and asked to rate each skill on level of importance, some parallels in the responses of the two groups were shown in the results. Graduates of both criminal justice and drafting placed accuracy at the top of the list, with 100 percent of criminal justice graduates rating accuracy as very important and 95.4 percent of drafting graduates rating accuracy as very important. Tying with accuracy in the ratings by drafting graduates was organization with 95.4 percent of the drafting respondents rating organization of data as very important. Of criminal justice graduates, 89.7 also rated organization of data very important. Clarity of expression

was rated very important by 94.8 percent of criminal justice graduates and 90.9 percent of drafting graduates. Closeness in percentages of responses from the two groups also occurred with identification of readers (criminal justice: 42.5 percent and drafting 40.9 percent).

Major differences in percentages of responses from the two groups occurred in layout and design (criminal justice: 25 percent and drafting: 72.7), using visuals (criminal justice: 22.5 percent and drafting 71.4: percent), paragraphing (criminal justice: 42.5 percent and drafting: 13.6 percent), and vocabulary (criminal justice: 60 percent and drafting: 36.4 percent). More drafting graduates than criminal justice graduates considered layout and design and using visuals as very important. More criminal justice than drafting graduates considered paragraphing and vocabulary as very important.

Acknowledging again the limitation of subjectivity of self-reported data, the results of a direct question asked of the graduates of both programs was reported. Upon being asked to rate the importance of a writing course, the majority of all the respondents rated rated such a course as very important. More criminal justice graduates (87.5 percent) than drafting graduates (50.0 percent) rated a college writing course as very important. None of the responding graduates of either program rated a college writing course as not important.

The second direct question calling for an opinion asked the responding graduates whether or not they recommended af second-level writing course specifically targeted to people preparing to enter the respondent's field. All criminal justice respondents answered this question. Ninety percent of the criminal justice graduates indicated that they do recommend a second-level writing course for people preparing to enter the criminal justice field. Five percent did not recommend a special course and five percent were undecided. Fewer drafting graduates (45.5 percent) indicated that they do recommend a second-level writing course for people preparing to enter the drafting field. Thirty-two percent said they did not recommend such a course. While 18 percent of drafting graduates were undecided, 4.5 percent gave no response.

Conclusions

A review of the literature can result in discovery of recommended procedures for use in conducting similar research. Of the recommended procedures for conducting surveys, the results show the usefulness of two in particular.

The fact that 59 graduates (15.9 percent) were removed from the original list of 369 by the pre-contact letter shows that the pre-contact letter is a means of testing the validity of addresses and bears out the recommendation of Fink and Kosekoff (1985). The results show the pre-contact letter is worth the time and expense involved in its use.

Follow-up postcards did bring in more questionnaires and increase the survey response rate. Use of a follow-up communication in the form of a postcard adds to the return rate as Galpin (1987) points out.

Some older addresses were invalid and affected accessibility to some graduates who have had more service in the field as Skelton (1983) suggested. Moreover, of the graduates actually contacted, 39.6 percent responded leading to the conclusion that a non-response bias is present in the study. The conclusion is that the non-response bias represents a pre-acknowledged limitation predicted by Isaac and Michael (1987) to the study.

The number of years in the field with up to 59.7 percent of respondents reporting they have more than five years of experience in the field suggests that some older addresses did work. Some Westmoreland County Community College graduates who have been graduated more than five years can be contacted by surveys.

A review of the literature can also result in the finding of studies similar to the study being undertaken. Such studies can be used as models to assist in research design.

Analysis of the data collected has provided results that have led to several conclusions.

It can be concluded that writing is an important second-level course for students in technical programs since writing is an important on-the-job activity of both

Westmoreland County Community College criminal justice and drafting graduates. The survey shows it is even more important to criminal justice graduates. Information on the importance of writing to criminal justice graduates and drafting graduates could be utilized to make present technical communication students aware of the significance of writing to their chosen occupations.

Writing on the job is a frequent occurrence for Westmoreland County Community College graduates of both the criminal justice and drafting programs, with over half of each group reporting writing every day. Criminal justice graduates write significantly more frequently than do drafting graduates (95 percent of criminal justice graduates as compared to 63.6 percent of drafting graduates). Information on the frequency of writing reported by criminal justice and drafting graduates could be utilized to make current technical communication students aware of the frequency of writing in their chosen occupations.

The study shows a difference in the type of documents which students in each field will be likely to prepare on the job. A large percentage of Westmoreland County Community College drafting graduates as opposed to a small percentage of criminal justice graduates prepare instructions on the job. Since the course outline of the present technical communications course now includes the writing of instructions as part of the course content, students in the drafting program can already benefit from

studying techniques for preparing instructions in the present technical communications course. It could be concluded that this particular writing need of the Westmoreland County Community College drafting student is already being addressed. On the other hand, significantly more Westmoreland County Community College criminal justice graduates than drafting graduates prepare narrative reports, formal reports, and letters. Preparation for writing those documents on the job could be increased and targeted at criminal justice students. Course content could be revised, or, since such a significant difference in the types of document prepared exists, separate technical communications courses could be put in place.

The study showed visuals to be a part of the on-the-job writing situation for WCCC graduates of both programs. It can be concluded that attention to use of visuals could be included in writing programs for Westmoreland County Community College students in both fields.

The study also revealed a difference in the type of visual used by graduates of the two targeted programs. Whereas a significantly larger proportion of criminal justice graduates use photographs, a significantly larger proportion of drafting graduates use drawings, tables, and charts. The preparation for use of visuals provided by the technical communications class in place could be improved.

The results show a concern about readers by graduates of both programs. Over 70 percent of all responding

graduates reported writing for each of the types readers presented on the questionnaire making the variety in audience for both evident. It could be concluded that audience could continue to receive attention in the technical communications courses.

The results also showed a significant difference in that criminal justice graduates reported more frequently that they write for others inside their organizations. More attention could be given to writing for readers inside the organization in technical communications courses for criminal justice students.

A difference in concern about writing skills needed on the job as reported by criminal justice and drafting graduates became evident in the results. Criminal justice graduates consistently reported a concern with accuracy when forced to rank concerns. While drafting graduates also reported concern with accuracy, the difference between the two groups was significant. Concerns with accuracy, clarity, and organization of data could be given increased attention in all technical communications courses.

Other differences in skills perceived by the graduates as important were evident. Layout and design and use of visuals are more important to drafting graduates; paragraphing and vocabulary were reported more important to criminal justice graduates. Differences in needs could be addressed in course content of technical communications courses.

Opinions of responding graduates on the importance of a college writing course could be utilized in decision making regarding course content. Opinions of responding graduates indicating a recommendation for a new second-level writing course specifically targeted to people entering their field could be utilized in decision making.

The study provides evidence that the writing situation of a criminal justice graduate is different from the writing situation of the drafting graduate in several ways.

According to Rothwell and Kazanas (1989), the definition of needs assessment is "comparison between what is and what should be" (p. 97). The study could be used as a needs assessment of students in technical communications classes. Special writing activities and needs of graduates from two programs have become evident from the data collected. Those actual needs represent "what should be." The content of the present technical communications course is known and the course syllabus is readily available for comparison of "what is." This study could provide the basis for making informed decisions about technical writing courses. The study outcomes could also provide the bases for decision making in regard to course offerings and assignments provided in those courses.

Implications

The conclusions drawn from this study have several implications.

A study can be improved by making a thorough review of

the literature which provides tested and proven methods and models for conducting similar studies.

The review of the literature can be used to locate precedent and models for the study currently being conducted.

The review of the literature can be utilized to increase the effectiveness of a study by utilizing the procedures recommended by experts.

The conclusions imply that specific recommendations made by experts in survey research that can be used at Westmoreland County Community College include the pre-contact letters to test out older addressess. The pre-contact letter recommended by Fink and Kosekoff (1985) removed 59 names from the original list by determining validity of addresses as old as twenty years. This suggests the usefulness of the pre-contact letter as a means of testing validity of addresses.

Another recommendation by experts in survey design that can be used at WCCC is a follow-up post card to bring in additional responses. Thirty-five additional questionnaires were received in the month following the mailing of the follow-up postcards recommended by Galpin (1987).

This survey of Westmoreland County Community College graduates, some of whom had been graduated for up to nineteen years when the survey was conducted, was affected by older addresses.. The implication of the low response rate (39 percent) is that older addresses can limit response

by limiting accessibility to the graduates. A limitation of the study in the form of a non-response bias should be recognized as a factor to be considered when interpreting the study results. A second factor, however, should also be considered. The median of 11 years of experience in the field for responding criminal justice graduates and the median of 4 years in the field for responding drafting graduates implies that some graduates of Westmoreland County Community College with older addresses on file can be reached by surveys. Despite the invalidity of older addresses, the survey was successful in getting responses from some graduates who had been graduated for a long period of time. This indicates an interest upon the part of older graduates in responding to the college, and supports a recommendation to include those graduates in survey research, despite the limitation the inclusion imposes.

The results show that writing is an important on-the-job activity for both criminal justice graduates and drafting graduates. The implication is that a technical communications class is important to both programs and that a second-level writing course is very important to both. The significance could be made more evident to present students by showing the study results and by inviting respondents to speak to present students as resource people.

The results also suggest that writing may be more important to criminal justice graduates than to drafting

graduates. Emphasis could be added by showing the students the results of the study.

The results of the responses to questions concerning amount of time spent writing on the job imply that both criminal justice and drafting graduates write frequently on the job. The implication is that present students of both programs can expect to write on the job every day. The significance could be made more evident to present students by showing the study results and by inviting respondents to speak to present students as resource people.

The results of the survey show that WCCC criminal justice graduates write significantly more frequently than do WCCC drafting graduates. A majority of criminal justice graduates (95 percent) reported writing every day.

The results imply that there are differences in the types of written communication prepared on the job by WCCC criminal justice graduates and drafting graduates. Those differences were shown in the proportion of respondents reporting preparation of four particular types of written communication. A higher proportion of criminal justice graduates reported preparing narrative, letters, and formal reports; a higher proportion of drafting fraduates reported preparing instructions. For the other eight types of written communication, there were differences, but there were no significant differences.

Significantly more Westmoreland County Community College criminal justice graduates than drafting graduates

prepare narrative reports, formal reports, and letters. Students in the criminal justice program can get more preparation for writing on the job by studying techniques for writing those documents. The unmet need of concentrating on writing narratives and preparing formals reports and letters could be addressed by targeting the criminal justice student with a special technical communications course.

On the other hand, a large percentage of Westmoreland County Community College drafting graduates as opposed to a small percentage of criminal justice graduates prepare instructions on the job. Students in the drafting program can continue to benefit from studying techniques for preparing instructions by retaining the writing of instructions on the present syllabus as a major writing assignment. It can be concluded that the results show a difference in the type of documents prepared on the job.

Focus on visuals could be continued in technical communications by continuing inclusion in course content. Since a significant difference in the types of visuals employed by reporting graduates exists, separate technical communications courses could be put in place.

Since responses from graduates show an awareness of audience as a factor impacting writing and that audience for both is varied, audience could continue to be a factor of the writing situation addressed by the technical communication course. More attention could be given to

writing for readers inside the organization for present criminal justice students by targeting that group with a special technical communications course.

When respondents were forced to rank concerns about writing skills, significant differences were reported. Concerns could be addressed in the technical communications courses by focusing on accuracy and the means of attaining accuracy, on use of visuals, paragraphing and vocabulary choice. Differences could be addressed by focusing on those skills identified by criminal justice graduates in a special course targeted at students in that major.

The differences suggest there may be special writing needs for graduates of the two different programs surveyed, which suggests a difference in preparation provided by college classwork. The implication is that some generalizations can be made about the Technical Communications courses for Criminal Justice majors and Drafting Design majors at Westmoreland County Community College by using the present survey. Additional generalizations could be made by conducting surveys.

The implication is that Gagne and Briggs' (1979) call for serious analysis of needs is supported by the results of the study which show that precedent for course content set by previous technical communications courses and texts used in the technical communications courses does not necessarily meet need of WCCC criminal justice graduates on the job. A further implication is that an improved preparation for

criminal justice students for writing on the job could be accomplished by targeting the criminal justice students with a special course.

Recommendations

The following recommendations pertaining to conducting surveys at Westmoreland County Community College stem from this research.

Pre-contact letters should be used to determine validity of available addresses when conducting surveys at Westmoreland County Community College.

Follow-up postcards should be used as a successful alternative to mailing out a second questionnaire or using a follow-up letter.

Graduates with addresses over five years old should be included in WCCC survey research, despite the limitation of non-response bias the inclusion imposes.

One way of determining the success of education is to survey the graduates. Questions we ask should include those that deal with how well they are functioning as self-sufficient, participative members of the work world in which they live. More surveys of the graduates are recommended.

Literature on previous studies of a similar nature should be reviewed for assistance in preparing the study being undertaken.

The purpose of the study was to determine the writing needs of students in two technical programs at Westmoreland

County Community College through asking the graduates about the writing they do on the job. Through the study, it is now known what graduates of the two programs have found what those writing tasks and needs are. Some differences that exist between the writing needs of the Criminal Justice major and the Drafting Design major have become apparent. The study outcomes should provide the bases for decision making in regard to course offerings and assignments provided in those courses.

The recommendations include the following:

1. Westmoreland County Community College technical programs should continue the requirement of including writing as a second-level course.

2. Introduction and implementation of a writing course designed specifically for the criminal justice major would enhance the Criminal Justice program at Westmoreland County Community College and provide better training for performance of criminal justice graduates from the college. Content of this course should focus on the techniques involved in the preparation of narrative reports, formal reports, and letters. Attention can be given also to the preparation of description and memos. Integration of visuals should also be included, with attention given to use of photographs, drawings, and maps. Audience should be a part of the course content with special attention given to readers inside the organization. The skills involved in achieving accuracy and clarity should receive attention.

Specifically, sentence structure, vocabulary, organization, and the mechanics of punctuation and capitalization should be addressed in a manner that relates the skill needed to accomplish the writing task goal.

3. The present technical communications program which includes techniques on the preparation of instructions and the preparation of tables meets the on-the-job writing tasks as described by responding graduates of the drafting program. It should be retained as a general course offering for students in technical fields such as the drafting program.

4. More emphasis should be placed in all technical communications courses, the recommended course for criminal justice majors and the technical communications course presently in place, upon the importance of writing to graduates of the technical programs. Results from studies such as the present study should be shared with present students in order to impress upon them the significance of the job they have at hand in the class. Similarly, the frequency with which the graduates report they write should be made known to the present students. Again studies such as the present one might be used. Also, in order to achieve both goals, it is recommended that responding graduates from the programs should be asked to participate in the classes, providing opportunity for the students to hear from the graduates themselves.

5. Further studies surveying graduates of WCCC are recommended. Graduates from technical programs other than criminal justice or drafting could provide data that would yield information for decision making in regard to course content or revision.

6. Finally, a general recommendation resulting from the study can be made. It has been pointed out that since the population from which the analyzed data was drawn was confined to graduates of the criminal justice and drafting programs at Westmoreland County Community College, the conclusions, implications, and recommendations made have been confined to Westmoreland County Community College. It is recommended that similar studies be undertaken which are not confined to graduates of a single educational institution, so that broader conclusions can be drawn.

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APPENDIX A

COPY OF PRE-CONTACT LETTER

WESTMORELAND COUNTY COMMUNITY COLLEGE
Youngwood, PA 15697-1895 • (412) 925-4000

September 3, 1991

Dear WCCC Graduate:

We need your help. We are conducting a survey of 378 WCCC graduates from 1972 through 1990. You are one of the WCCC graduates chosen to participate in the survey.

In the next week and a half, we will be mailing you a questionnaire and asking you to respond to a set of questions about the nature of the writing you do on your job. I teach Technical Communications at WCCC, and your answers will help me to revise our course to better prepare our students for writing at work.

When the questionnaire arrives, will you please take about ten minutes to answer about twenty questions? Your assistance will be greatly appreciated.

Sincerely,

Judith Metzgar

Assistant Professor
(412) 925-4025
Communications/Public Services
WCCC

WCCC is an affirmative action, equal opportunity college

APPENDIX B

COPY OF QUESTIONNAIRE

WRITING NEEDS SURVEY

Thank you for taking the time to respond to these questions. There are no "correct" answers; the correct answer is any response you have to what is being asked. Please check the box in front of the answer that best fits your response. When no appropriate response has been listed, fill in the blank space provided at the end of the question.

A. Occupation Identification

1. In which field do you have an associate degree from Westmoreland County Community College?

[] Criminal Justice [] Drafting and Design [] Other Please write in the field. _____

2. In what field are you presently employed?

[] Criminal Justice [] Drafting and Design [] Other Please write in. _____

3. How many years have you been working in the field you have checked? _____ years.

4. What is your present position? _____

5. How many years have you been working in your present position? _____ years.

6. Have you held other positions in your field? [] Yes [] No

B. Writing Frequency

In answering the following questions, think back over the last two to four weeks and focus upon the writing you have done.

1. How often do you write as a part of your job?

[] Every day [] At least twice a week [] Once a week

[] At least twice a month [] Once a month [] Seldom [] Never

2. What percentage of each day would you say you spend writing? _____%

C. Readers: People for Whom You Write

1. For whom do you write on the job? Who will be using your work? Check as many items as apply.

[] notes for yourself

[] for others in your immediate organization who will be using your work, such as:

[] co-workers [] supervisors [] those you supervise [] other _____

[] for others outside your immediate organization who will be using your work, such as:

[] customers [] vendors [] news agencies

Please write in any outside readers I have not listed. _____

2. What are your major concerns about your writing when you present it to a reader such as you have identified? Check two.

[] clarity [] objectivity [] accuracy [] organization [] format

[] mechanics (spelling, punctuation, capitalization) [] other_____

3. Knowledge level of your readers:

a. How often do you write for a reader that knows as much about the subject as you? _____% of time

b. How often do you write for a reader that knows less about the subject than you? _____% of time

c. How often do you write for a reader that knows more about the subject than you? _____% of time

d. How often do you write a single document for several different readers with varying levels of knowledge about the subject? _____% of time

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D. Forms of Written Communication

1. Twelve forms of written communication are presented here. Please check the forms of communication you have prepared on the job.

[] Prepared forms [] Memos [] Narrative Reports (how it happened)

[] Instructions/Procedures [] Abstracts [] Description of something

[] Progress or Status Reports [] Proposals [] Meeting Minutes

[] Formal Reports [] Letters [] Scripts for Presentations

[] Other Please specify._____

2. If you checked formal reports, check the types of reports you prepare:

[] inspection [] information [] investigation [] recommendation

3. Please check the response that best describes the frequency with which you have prepared each of these forms of written communication.

FORM	Daily	Weekly	Bi-Monthly	Monthly	Annually	Never
Prepared forms	[]	[]	[]	[]	[]	[]
Memos	[]	[]	[]	[]	[]	[]
Narrative Reports (how it happened)	[]	[]	[]	[]	[]	[]
Instructions/Procedures	[]	[]	[]	[]	[]	[]
Abstracts	[]	[]	[]	[]	[]	[]
Description of something	[]	[]	[]	[]	[]	[]
Progress or Status Reports	[]	[]	[]	[]	[]	[]
Proposals	[]	[]	[]	[]	[]	[]
Meeting Minutes	[]	[]	[]	[]	[]	[]
Formal Reports	[]	[]	[]	[]	[]	[]
Letters	[]	[]	[]	[]	[]	[]
Scripts for Presentations	[]	[]	[]	[]	[]	[]
Other _____	[]	[]	[]	[]	[]	[]

E. Visuals

1. Several types of visuals are listed here. Please check those you use in documents on the job.

[] photographs [] drawings [] maps [] tables

[] graphs (Please circle graph types.) pie bar line other_____

[] charts (Please circle chart types.) flow organization

2. How often do you use visuals in your documents? _____% of time

3. In your field, are visuals integrated into the document or are they put into an appendix?

[] integrated [] in Appendix

4. How important are visuals to someone working in your field?

[] Very important [] Some importance [] Little importance [] No importance

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F. Changes in Writing in the Workplace

The next three questions are directed to respondents who have been graduated from WCCC for six years or more. If not applicable, please move on to section G.

1. Has the percentage of time you spend writing on the job changed with the number of years you have been in the field?

   [] Yes [] No

2. If your answer is yes, has the change involved an increase or decrease in the percentage of time you spend writing?

   [] Increase [] Decrease

3. Do you use the computer for written communication in your workplace?

   [] Yes [] No

G. Importance of Writing in the Workplace

1. How important is writing to performing your job?

   [] Very important [] Some importance [] Little importance [] No importance

2. What skills do you consider important to preparing written communications in your field?

SKILL	Very important	Some importance	Little importance	No importance
identifying your readers	[]	[]	[]	[]
pre-planning	[]	[]	[]	[]
sentence structure	[]	[]	[]	[]
paragraphing	[]	[]	[]	[]
organization of data	[]	[]	[]	[]
clarity of expression	[]	[]	[]	[]
vocabulary choice	[]	[]	[]	[]
objectivity	[]	[]	[]	[]
accuracy	[]	[]	[]	[]
editing/revising	[]	[]	[]	[]
Using correct formats for specific documents	[]	[]	[]	[]
layout and design	[]	[]	[]	[]
using visuals	[]	[]	[]	[]
Other _____	[]	[]	[]	[]

H. Writing Courses in College

1. How important do you consider a writing course in college?

   [] Very important [] Some importance [] Little importance [] No importance

2. Do you recommend a second-level writing course specifically targeted to people preparing to go into your field?

   [] Yes [] No [] Undecided

98

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I. Your Comments

J. Your Identification

We know some of our graduates have completed education beyond the associate degree earned at WCCC. Have you completed education beyond the associate degree earned at WCCC?

[] Additional Training Specify_____

[] Certification Specify_____

[] Bachelor's Degree Institution_____

[] Master's Degree Institution_____

[] Now attending Specify_____

[] Other Specify_____

Your Name _____

Address _____

_____

_____

Thank you for sharing your experience with us in this research. If you have any questions, do not hesitate to call me. I can be reached Monday through Friday at (412) 925-4025.

Judith Metzgar
Assistant Professor, WCCC

APPENDIX C

COPY OF COVER LETTER ACCOMPANYING QUESTIONNAIRE

WESTMORELAND COUNTY COMMUNITY COLLEGE
Youngwood, PA 15697-1895 • (412) 925-4000

September 16, 1991

Dear WCCC Graduate:

An educator in the field of Technical Communications recently wrote: "To find out if the technical writing course was providing the skills needed by technicians on the job, we went to the graduates themselves."

This is what the enclosed questionnaire is all about. We want to know about the writing you do on the job and what you think matters most in the way of preparation to do that writing.

You were selected because you have earned an Associate Degree from Westmoreland County Community College in either Criminal Justice or Drafting and Design. I suspect that there may be differences in the types of writing produced by graduates from those programs. Your responses will help provide me with some answers to the questions I have about those differences.

Will you help? I will appreciate your input and any additional thoughts about writing on the job you care to pass along. It will mean a great deal to future WCCC graduates.

Please use the pre-paid envelope to return your questionnaire by September 30. Thank you in advance for taking your time to respond.

Sincerely,

Judith Metzgar

Assistant Professor, English
(412) 925-4025

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APPENDIX D

COPY OF FOLLOW-UP POST-CARD

WESTMORELAND COUNTY COMMUNITY COLLEGE
Youngwood, PA 15697-1895

October 4, 1991

Two weeks ago you received a questionnaire about writing on the job.

We really need your response to make the survey complete. Your experience and opinions are important.

Please take a few minutes to answer the questions and return the response in the pre-paid envelope. If you've already mailed your response, thank you again for your cooperation.

Judith Metzgar
Assistant Professor